

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims

Claim 1 (currently amended): A method for forming a flip chip interconnection structure, comprising

providing a first member on an IC chip and a second member on a substrate, the first member comprising a deformable material having a low yield strength and a high elongation to failure and the second member having surface asperities on a surface on a part of the second member to be bonded with the first member, a width of the second member surface being smaller than a width of the first member; and

bringing the first member into contact with the surface on the second member and pressing the first and second members against one another using a force sufficient to cause plastic flow of part of the first member into the surface asperities on the second member.

Claim 2 (original): The method of claim 1 wherein the first member is a bump formed on the IC chip.

Claim 3 (original): The method of claim 1 wherein the deformable material of the first member comprises gold.

Claim 4 (original): The method of claim 1 wherein the second member is a surface pad.

Claim 5 (original): The method of claim 1 wherein the second member is a lead.

Claim 6 (original): The method of claim 1 wherein the second member is a via opening.

Claim 7 (original): The method of claim 1 wherein the second member has a plated finish.

Claim 8 (original): The method of claim 1, said bump comprising one of a set of such bumps.

Claim 9 (original): A flip chip interconnection structure made by the method of claim 1.

Claims 10 - 18 (canceled)

Claim 19 (previously presented): The method of claim 1 wherein the part of the second member to be bonded with the first member has a generally trapezoidal shape in transverse sectional view, the second surface comprising a plateau having a width smaller than a width of the first member.

Claim 20 (previously presented): The method of claim 1, further comprising, prior to pressing the first and second members against one another, dispensing a curable adhesive onto a mating surface of the substrate.

Claim 21 (previously presented): The method of claim 1, further comprising, prior to pressing the first and second members against one another, dispensing a curable adhesive onto a mating surface of the IC chip.

Claim 22 (currently amended): A method for forming a flip chip interconnection structure, comprising

providing a first member on an IC chip and a second member on a substrate, the first member comprising a deformable material having a low yield strength and a high elongation to failure and the second member having a surface adjacent an edge on a part of the second member to be bonded with the first member, a width of the second member surface being smaller than a width of the first member; and

bringing the first member into contact with the second member surface and pressing the first and second members against one another using a force sufficient to cause plastic flow of part of the first member around the edge.

Claim 23 (previously presented): The method of claim 22 wherein the first member is a bump formed on the IC chip.

Claim 24 (previously presented): The method of claim 22 wherein the deformable material of the first member comprises gold.

Claim 25 (previously presented): The method of claim 22 wherein the second member is a surface pad.

Claim 26 (previously presented): The method of claim 22 wherein the second member is a lead.

Claim 27 (previously presented): The method of claim 22 wherein the second member is a via opening, a margin of the via opening comprising the edge.

Claim 28 (previously presented): The method of claim 22 wherein the second member has a plated finish.

Claim 29 (previously presented): The method of claim 22, said bump comprising one of a set of such bumps.

Claim 30 (previously presented): A flip chip interconnection structure made by the method of claim 22.

Claim 31 (canceled)

Claim 32 (previously presented): The method of claim 22 wherein the part of the second member to be bonded with the first member has a generally trapezoidal shape in transverse sectional view, the second member surface comprising a plateau having a width smaller than a width of the first member.

Claim 33 (previously presented): The method of claim 22, further comprising, prior to pressing the first and second members against one another, dispensing a curable adhesive onto a mating surface of the substrate.

Claim 34 (previously presented): The method of claim 22, further comprising, prior to pressing the first and second members against one another, dispensing a curable adhesive onto a mating surface of the IC chip.

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Claim 35 (previously presented): The method of claim 22, the second member being provided with asperities on a surface thereof.